Homeland Security

Science and Technology

Emergency Data Exchange Language (EDXL)

Background

The Office for Interoperability and Compatibility (OIC) within the Command, Control and Interoperability (CCI) Division of the Science and Technology (S&T) Directorate facilitates the development of a practitioner-driven messaging suite of standards called the Emergency Data Exchange Language (EDXL). The EDXL suite of standards is designed to facilitate emergency information sharing and data exchange across local, tribal, state, Federal and non-governmental emergency response and management disciplines. These Extensible Markup Language (XML)-based standards enable the emergency response community to share data seamlessly and securely during an incident.

The development of EDXL standards is supported and prioritized by the input of the OIC-Sponsored Standards Working Group (SWG). This group provides cross-discipline, all-hazards participation to identify requirements and draft messages for new standards. Standards are vetted by an international Standards Development Organization (SDO) called the Organization for the Advancement of Structured Information Standards (OASIS). OIC also works to promote the deployment of the EDXL standards into vendor software, applications, and devices that are used by the responder community via a formal memorandum of agreement (MOA) with the Emergency Interoperability Consortium (EIC) and a testing and certification program with the National Incident Management System (NIMS) Support Center.

EDXL Standards

Standards that are adopted by OASIS are specified by dates. EDXL is composed of the following standards:

- **Common Alerting Protocol (CAP) Version 1.1 – *October 2005*:** Provides the ability to exchange all-hazard emergency alerts, notifications, and public warnings, which can be disseminated simultaneously over many warning systems (e.g., computer systems, wireless, alarms, TV, and radio)
- **Distribution Element (DE) – *April 2006*:** Provides a flexible message-distribution framework for data sharing in emergency information systems. Messages may be distributed by specific recipients, by a geographic area, or by other codes such as agency type (ex. police or fire).
- **Hospital AVailability Exchange (HAVE) – *November 2008*:** Enables the exchange of hospital status, capacity, and resource availability between medical and health organizations and emergency information systems
- **Resource Messaging (RM) – *November 2008*:** Provides standard exchange of resource requests for the use, deployment, and return of assets (persons or things) needed to support emergency and incident preparedness, response, and recovery
- **Situation Reporting (SitRep):** Submitted to OASIS in March 2009. Provides information on the current situation, the operational picture, and current response and resources in an actionable form for incident management decision making before, during, and after emergencies and disasters of any scale or type of hazard
- **Tracking of Emergency Patients (TEP):** Prepared for submission to OASIS. Provides patient location and treatment information from the scene of incident until facility admittance

Impact

Much like voice interoperability that provides seamless radio communications for first responders, data interoperability enables multiple responders, regardless of discipline or jurisdiction, to share information via existing and disparate data systems. Using EDXL, first responders can communicate more effectively with emergency operations centers, which can provide them with a higher level of situational awareness, more resources for response, and the ability to mobilize the public with an alert or warning and make better decisions.

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Through a practitioner-driven approach, the Science and Technology Directorate's Command, Control and Interoperability (CCI) Division creates and deploys information resources—standards, frameworks, tools, and technologies—to enable seamless and secure interactions among homeland security stakeholders. With its Federal partners, CCI is working to strengthen capabilities to communicate, share, visualize, analyze, and protect information.